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## EDITORIAL ANNOUNCEMENT

With great satisfaction the Editorial Board of RHODORA welcomes the election by the Council of the New England Botanical Club of RALPH CARLETON BEAN to fill the place left vacant through the death of Charles Alfred Weatherby. Mr. Bean, an active and discriminating student of the New England flora, brings to the journal the point of view of the amateur and, likewise, ability to aid in questions of careful presentation of articles.

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CONTRIBUTIONS FROM THE GRAY HERBARIUM OF  
HARVARD UNIVERSITY—NO. CLXX

## THE AMERICAN BARBISTYLED SPECIES OF TEPHROSIA (LEGUMINOSAE)

CARROLL E. WOOD, JR.

(Continued from page 364)

### 44. *Tephrosia diversifolia* (Rose) Macbr.

*Cracca diversifolia* Rose, Contr. U. S. Nat. Herb. **12**: 270. fig. 24. 1909. Uruapan, Michoacán, Mexico, C. G. Pringle 13697, 14 Nov. 1905 (US 462389-Type; GH).

*Tephrosia diversifolia* (Rose) Macbr. Field Mus. Publ. Bot. **4**: 87. 1925.

Erect suffrutescent perennial ca. 5–10 dm. high; stems clustered, nearly terete, striate below, obtusely angled, sulcate above, generally herbaceous. Stems, petioles, rachises and axes of inflorescences densely covered with short, fine, twisting cinereous to rusty hairs, soft to the touch. Leaves ascending, 7–13 cm. long, sessile or with petioles 1–4 mm. long, the rachis when present 0.5–2.5 cm. long; stipules triangular to linear, acute or acuminate, 7 mm. or less long, persistent, often recurving; leaflets 1–5, the terminal the largest, oblong to elliptic, the base acute, obtuse, or rounded,

the apex obtuse, rounded, or retuse, mucronulate, 6–10 cm. long, 2.4–4 cm. wide, the lowermost pair of leaflets usually much smaller, suborbicular, oval, ovate or elliptic, the base often oblique, 1.5–4.5 cm. long, 1.6–3.5 cm. wide; leaflets coriaceous, veiny above, at first strigillose with very fine flexuous cinereous to rusty hairs, glabrate or nearly so and shining above, densely white-tomentose below with short, very fine, matted hairs, the veins prominent, the margins undulate, subcrenate; petiolules 1–3 mm. long, ca. 1.5 mm. in diameter. Inflorescences terminal and solitary in the upper axils, 3–30 cm. long, the terminal often paniculate with 1–5 branches 2–17 cm. long from the axils of small deciduous bracts, erect or ascending, leafless, usually exceeding the leaves, the peduncle 1–10 cm. long, the flowering portion dense, short, the flowering nodes 3–ca. 15; buds at a node apparently few to many, probably 2 or 3 flowering. Primary bracts oval to orbicular, 3.5–9 mm. high, 3–8 mm. broad, abruptly short-acuminate, somewhat spathaceous, often persisting, conspicuous, crowded, densely short-tomentose without, reddish and glabrous within. Pedicels 6–9 mm. long, ascending, tomentose. Dried flowers 20–25 mm. long. Calyx 13–15 mm. long, densely hirsutulous-tomentose with somewhat tortuous and tangled cinereous to tawny or dark-brown hairs, the tube 5–6 mm. long, the upper lobes long-acuminate, 5–8 mm. long, the lateral oblong-lanceolate to ovate-lanceolate, obliquely acuminate, 8–11 mm. long, ca. 3.5 mm. wide, the lowermost oblong to oblong-obovate, abruptly short-acuminate, 10–11 mm. long, 5–6.5 mm. wide; calyx with 2 conspicuous broadly (sometimes obliquely) oval bracteoles 8–10 mm. high, 10–15 mm. wide, the apex abruptly short-acuminate or mucronate, the bracteoles caducous, spathaceous, reddish and glabrous within, densely short-tomentose without with cinereous to dark-brown hairs. Corolla violet in recently dried specimens; blade of the banner nearly orbicular to oval, 16–18 mm. high, ca. 21 mm. broad, densely silky hirsutulous-tomentose on the back, broadly cuneate at the base, tapering into a distinct claw ca. 6 mm. long; wings 20–23 mm. long, 7–8 mm. wide, with a rounded auricle, the claw 6–7 mm. long; keel 19–20 mm. long, 7–8 mm. deep, slightly auricled, the claw 7 mm. long. Staminal tube 13–16 mm. long, the vexillary stamen coherent with the staminal tube, free at the base, broad and flattened on the upper surface. Ovary densely appressed-hirsutulous. Legumes nearly straight, short-beaked, (1.5–)3–4.5 cm. long, 8–10 mm. wide (including pubescence), somewhat spreading, very densely hirsutulous with nearly straight, crowded, erect, somewhat lustrous tawny hairs, pilose; seeds (1–)5–6, the mature seeds not seen, the immature seeds nearly orbicular. Flowering collections from November to January.

DISTRIBUTION. Pine forests, 1700–1800 m., mountains of western Michoacán, Mexico. Map 20.

SPECIMENS EXAMINED. MEXICO. MICHOACÁN: Uruapan, *Pringle 13697*, 14 Nov. 1905 (GH, US); mountain-side near Coru Station, 6000 ft., *Pringle 10347*, 26 Jan. 1907 (GH, MEXU, NY, PH, UC, US); shrub 0.75 m. high, pine forest, Puerto Zarzamora, 1740 m., Dist. Coalcomán, *Hinton 12719*, 5 Dec. 1938 (GH).

45. *Tephrosia platyphylla* (Rose) Standl.

*Cracca platyphylla* Rose, Contr. U. S. Nat. Herb. **12**: 270. fig. 25. 1909. Dry hillsides in pine woods between Mascota and San Sebastián, Jalisco, Mexico, *E. W. Nelson 4062*, 14 Mar. 1897 (US 327035-Type; NY-photograph).

*Tephrosia platyphylla* (Rose) Standl. Field Mus. Publ. Bot. **4**: 214. 1929.

Stiffly erect suffrutescent perennial 2–6 dm. high; stems from woody crowns, clustered, sulcate, angled. Stems, petioles, and axes of inflorescences densely covered with short fine twisting cinereous to tawny or rusty hairs, soft to touch. Leaves ascending, 4–13 cm. long, the petioles 3–12 mm. long; stipules triangular, oblong or lanceolate, 10 mm. or less long, persistent; leaflets 1 or occasionally 3, elliptic to oblong-elliptic, oval or obovate, the base obtuse to subcordate, the apex rounded, obtuse or retuse, mucronulate, principally (3.3–)4–11.5 cm. long, (2–)2.5–6.5 cm. wide, the paired leaflets when present much smaller than the terminal; leaflets coriaceous, very veiny, the veins impressed above, densely short-strigose with soft flexuous tawny hairs above, appearing silky or woolly, becoming glabrous and shining with age, densely short-tomentose beneath with fine tangled whitish to tawny hairs, hirsutulous along the midrib and principal lateral veins, the margins undulate, often subcrenate or rolled under; petiolules 1–3 mm. long, inconspicuous. Inflorescences terminal, compact, short, 4–8 cm. long, the stout peduncle 1.5–5 cm. long, sometimes bearing 1 or 2 sterile bracts, the flowering nodes 3–ca. 10; buds apparently 2 or 3 at a node. Bracts ovate to nearly circular, gradually acuminate, usually abruptly narrowed at the base, 9–16 mm. long, 4–8 mm. wide, crowded, caducous, glabrous within, densely lanate without. Pedicels 10–12 mm. long, ascending. Dried flowers ca. 20 mm. long. Calyx 10–17 mm. long, densely covered with short tangled hairs and with longer ascending white or (along the margins) rusty hairs ca. 2 mm. long, appearing woolly, the tube ca. 5–6 mm. long, the lobes acuminate, the upper lobes subulate to lanceolate, 5–9 mm. long, the lateral lanceolate, 8–12 mm. long, the lowermost ovate-lanceolate, 9–13 mm. long, 5–6 mm. wide. Corolla “rich rose-red” (Nelson) or “purple” (Mexia); blade of the banner sub-orbicular, ca. 17–20 mm. high, ca. 21 mm. broad, densely hairy on the back, the claw ca. 6 mm. long; wings ca. 19 mm. long, 8 mm. wide, slightly auricled, the claw 3 mm. long; keel ca. 18 mm. long, 8 mm. deep, with a small basal auricle, the claw 4.5 mm. long. Staminal tube 13–15 mm. long, the vexillary stamen coherent with the tube, free at the base, broad and flattened on the upper side. Ovary ca. 12 mm. long, densely hirsutulous with ascending tawny hairs; ovules ca. 7. Legume and seeds not seen.

DISTRIBUTION. Open oak and pine forests, mountains in the region of San Sebastián, western Jalisco, Mexico. Map 20.

SPECIMENS EXAMINED. MEXICO. JALISCO: Dry hillside in pine woods, roadside between Mascota and San Sebastián, *Nelson 4062*, 14 Mar. 1897 (US); dry, open, oak and pine woods, trail to Tranquillas, Real Alto, Sierra Madre Occidental, 2500 m., *Mexia 1716*, 19 Feb. 1927 (A, CAS, DS, GH, MO, NY, UC, US).

The large, coriaceous, usually unifoliolate leaves and the large, densely hairy calyx without bracteoles are quite characteristic. *Tephrosia platyphylla*, presumably most closely related to *T. diversifolia*, is the most highly modified of the species with few, large, coriaceous leaflets. In this species the reduction of leaflets to one (or three on large plants), of the number of nodes of the inflorescence, of the number of buds at a node, and of size and woodiness of plant seem to have accompanied one another.

#### INTRODUCED SPECIES

The exotic species naturalized in the Americas, chiefly in the West Indies, include at least *Tephrosia grandiflora*, *T. candida*, \**T. noctiflora* and \**T. purpurea*. In addition *T. Vogelii* and \**T. villosa* have been tested as cover-crops and may be expected to escape from cultivation. Of the barbistyled species only *T. candida* and *T. grandiflora* seem to have become naturalized to any extent. *Tephrosia Vogelii* and *T. bracteolata* are known to me only from one old collection each, and are consequently regarded only as waifs. At least one other species, the African \**T. linearis* (Willd.) Pers. (*Cracca hypoleuca* Rydb., *Indigofera Periniana* Spreng.), is also known as a casual adventive in the New World.

#### 46. *Tephrosia grandiflora* (L'Hér. ex Ait.) Pers.

*Galega rosea* Lam. Dict. **2**: 599. 1786, not *Tephrosia rosea* F. Muell. ex Benth. 1864. Seen by Lamarck in the garden of M. Cels in August, 1786, and believed by him to have come from Africa.

*Colinil rosea* (Lam.) Hitchc. Mo. Bot. Gard Rep. **4**: 75. 1893.

*Galega grandiflora* L'Hér. ex Ait. Hort. Kew. **3**: 70. 1789. "Native of the Cape of Good Hope. Mr. Fr. Masson. Introduced 1774." Attributed in synonymy to L'Héritier, Stirp. Nov. **2**: pl. 44, which was never published. According to Forbes (1948, p. 992), the type-specimen, Aiton, cult. Hort. Kew., is non-extant.

*Tephrosia grandiflora* (L'Hér. ex Ait.) Pers. Syn. Pl. **2**: 329. 1807. Basonym mistakenly attributed to Vahl, 1790, who cited Aiton.

*Apodynomene grandiflora* (L'Hér. ex Ait.) E. Mey. Comm. Pl. Afr. Austr. 111. 1836. Based on *T. grandiflora* (L'Hér. ex Ait.) Pers.

*Cracca grandiflora* (L'Hér. ex Ait.) Kuntze, Rev. Gen. **1**: 175. 1891. Basonym incorrectly attributed to Vahl.

*Apodynomene Meyeri* C. Presl, Bot. Bemerk. 57. 1844. Based on *A. grandiflora* E. Mey. which Presl believed to differ from true *Tephrosia grandiflora*, although Meyer clearly indicated the nomenclatural basis of the name. Neither description is diagnostic.

Woody perennial 5–6 dm. high from a slender tap-root with numerous branches, or a shrubby plant 2 m. high; stems erect, monopodial with axillary branches 6–20 cm. long, often woody below, the bark buff-colored, the stems often dark above. Stems, petioles and rachises strigillose with fine white or rusty hairs. Leaves 3–8 cm. long, the petiole 4–18 mm. long, usually shorter than the lowermost leaflets, the rachis 1.5–6.5 cm. long; stipules ovate, acuminate, 5–10 mm. long, 3–5 mm. wide, persistent, conspicuous, reddish or brownish, 9–13-veined, sparsely strigillose; leaflets of the principal leaves 9–15, oblanceolate to oblong, the base acute, the apex obtuse, mucronate or weakly cuspidate, 10–20(–24) mm. long, 3–4.5(–7) mm. wide, glabrous above, dull, strigillose beneath with whitish hairs, the veins often purplish on both surfaces, the leaflets somewhat conduplicate; petiolules 1–2 mm. long, densely strigillose with brown hairs. Inflorescences terminating main and axillary branches, erect, naked, short-peduncled, exceeding the leaves, (1–)2–9 cm. long, the flowering portion 0.5–2 cm. long with 3–5 crowded flowering nodes, the nodes buttressed; buds 3 at a node, 2 of these developing, flowering and fruiting, the third rudimentary. Primary bracts 2 cm. or less long, large, broadly ovate, acuminate, spathaceous, ca. 18-veined, reddish, deciduous before anthesis; secondary bracts absent. Pedicels 6–12 mm. long, ascending, strigillose. Dried flowers 20–22 mm. long. Calyx 5–6 mm. long, strigillose with fine rusty hairs, the upper lobes subulate, almost completely fused together, 1.5–2 mm. long, the lateral lobes deltoid-subulate, 3–3.5 mm. long, the lowermost linear-subulate, 4–5.5 mm. long. Corolla rose, the back of the banner orange, densely covered with fine rusty hairs; blade of the banner nearly orbicular, 16–18 mm. broad, tapering into a claw ca. 3 mm. long; wings ca. 22 mm. long, 8 mm. wide, exauriculate, the claw 3 mm. long; keel shallow, slightly beaked, 17–20 mm. long, the claw 3 mm. long. Staminal tube ca. 17 mm. long, the vexillary stamen coherent with the tube, broadened and thickened near the free base. Ovary rusty-hirtellous along both sutures, otherwise glabrous, the style barbate. Legumes straight, short-beaked, obliquely acute at either end, 4.5–5.5 cm. long, 8–9 mm. wide, horizontal or ascending, hirtellous along both sutures, the valves glabrous; seeds 9–16, ovoid, slightly compressed, 3.6–3.8 mm. long, 2.2–2.4 mm. wide, brown or black, the hilum near one end so that the long axis of the seed crosses the pod. Somatic chromosomes 22. Flowering collections throughout the year.

DISTRIBUTION. Native of South Africa; naturalized in Jamaica.

SPECIMENS EXAMINED. JAMAICA. Without locality, *Hart 524* (US); Blue Mts., St. Andrew near Cinchona, *Perkins 1017* (GH); rocky banks, vicinity of Cinchona, *Britton 210* (NY); dry slopes, Cinchona, *Shreve, 1903* (NY); vicinity of Cinchona, trail to St. Helen's Gap, *A. Taylor 4237* (NY); Cinchona, 5000 ft., *Clute 188* (NY, PH, US); vicinity of Cinchona, 1550 m., *Killip 163* (US); partially shaded rocky bank, Cinchona, 1500 m., *Maxon 2598* (US); leeward slopes, Cinchona, Blue Mts., *Harris & Lawrence C1597* (NY, US); open brushy slope, vicinity of St. Helen's Gap, St. Andrew, 1475 m., *Maxon & Killip 565* (GH, US); edge of thicket by trail

near St. Helen's Gap, Blue Mt. range, 4780 ft., *Chrysler 1873* (PENN); open slopes, Flamstead and vicinity, Fort Royal Mts., 1000–1100 m., *Maxon 8656* (US); dry hillside, Whitefield Hall, St. Thomas Parish, Surrey, *Hunnewell & Griscom 14323* (GH); Whitefield Hall, *G. Collins 77* (US); Abbey Green, *Orcutt 3235* (UC, US).

*Tephrosia grandiflora* is easily recognizable by the large, rose-colored flowers, the ovate, acuminate stipules and the spathe-like, reddish or brownish primary bracts. The large, promptly deciduous bracts and broad stipules were largely the basis of the segregate genus *Apodynomene* E. Mey. of which this is the type-species. Although stipules and bracts of this kind characterize a group of South African species, and the absence of secondary bracts is indeed anomalous, there seem to be no real reasons for separating this group as a distinct genus. The sectional rank accorded it by Harvey (1861, p. 203), who contrasted it with *Eutephrosia* with narrow bracts and stipules, may possibly prove to be a more reasonable disposition.

#### 47. *Tephrosia candida* DC.

*Robinia candida* Roxb. Cat. Hort. Calc. 56. 1814, nomen; DC. Prodr. 2: 249. 1825, as synonym.

*Tephrosia candida* DC. Prodr. 2: 249. 1825. Seen by DC. in Herb. Wallich, the specimen from Calcutta Gardens.

*Robinia candida* Roxb. Fl. Ind. 3: 327. 1832. “. . . first reared in the Company's Botanic garden, from seed collected in the north of Bengal by Dr. Carey.”

*Xiphocarpus candidus* (DC.) Endl. Gen. 1273. 1840; Zoll. & Mor. Nat. en Geneesk. Arch. Néerl. Indie. 3: 76. 1846.

*Kiesera candida* Reinw. Syll. Pl. Nov. 2: 11. 1828.

*Kiesera sericea* Reinw. ex Blume, Cat. Gew. Buitenz. 93. 1823, nomen; Reinw. Syll. Pl. Nov. 2: 11. 1828.

*Robinia sericea* Sieber, Fl. Mart. Exsicc. no. 181; C. Presl, Symb. Bot. 1: 14. 1832, as synonym.

*Xiphocarpus martinicensis* C. Presl, Symb. Bot. 1: 14. pl. 7. 1832. Martinique, *Kohaut*. (Undoubtedly an introduced specimen.)

Shrub 1–3 m. high; branches angled, striate or sulcate. Branches, petioles, rachises, petiolules and axes of inflorescences strigillose to short-strigose or hirtellous to hirsutulous with golden or tawny hairs. Principal leaves 5–22 cm. long, the petioles 6–20 mm. long, the rachis 3.5–14 cm. long; stipules linear-subulate, ca. 5–10 mm. long, persistent; leaflets of the principal leaves (13–)17–27, lance-oblong to linear-oblong or oblong, the base acute, the apex acute and cuspidate, 1.5–7 cm. long, 6–13 mm. wide, firm, green, glabrous or with a few scattered minute hairs ca. 0.2 mm. long above, pale beneath, moderately strigillose to strigose or hirtellous to

hirsutulous with soft cinereous to golden hairs, silky or lustrous; petiolules 2–3 mm. long, slender, conspicuous. Inflorescences usually short, dense, terminal and in the upper axils, the terminal flower-bearing portion 2–19 cm. long, 1 or 2 nodes often with leaves, the axillary inflorescences often reduced to dense clusters in the axils, the flowering nodes 5–35; buds ca. 5–10 at a node, 3–6 flowering, 1 or 2 fruiting. Primary bracts subulate, 4–7 mm. long, caducous; secondary bracts ca. 3 mm. long, caducous. Pedicels 8–15 mm. long, strigillose to hirtellous. Dried flowers 23–26 mm. long. Calyx 4–5 mm. long, strigillose to hirtellous with rusty hairs, the tube ca. 4 mm. long, the upper lobes nearly obsolete, rounded, blunt, with a very broad, shallow sinus 0.5–1 mm. deep between them, the lateral lobes rounded-ovate, abruptly and minutely acuminate, 1.5–2 mm. long, the lowermost lobe ovate, 2–3 mm. long. Corolla white; blade of the banner broadly obovate, 20–22 mm. high and wide, finely short-strigose on the back, the broad claw 3–4 mm. long; wings 24–25 mm. long, 10–12 mm. wide, the claw 3 mm. long, exauriculate; keel 22–24 mm. long, 10–11 mm. deep, the claw 3.5–4 mm. long. Staminal tube 18–20 mm. long, the vexillary stamen coherent with the tube, free at the base, with a conspicuous callosity on the upper side near the base. Ovary densely strigillose, the style barbate. Legumes linear, 6–9 cm. long, 7–9 mm. wide, both strigillose and strigose or hirtellous and hirsutulous with rusty or tawny hairs, often silky but not appearing conspicuously hairy, brown; seeds 10–13, compressed, 3.2–3.6 mm. wide, brown to gray variegated with black, with a conspicuous white caruncle ca. 1 mm. high excentrically placed.

DISTRIBUTION. Native of India; naturalized in Jamaica and apparently in Suriname, Venezuela and Colombia, possibly escaping from cultivation in Puerto Rico, Dominica, St. Kitts and Brazil.

SPECIMENS EXAMINED. JAMAICA. Bush 3 m. high, Swift River, Hope, 160 m., *Harris 6031*, 1895 (NY); river banks, 480 ft., near Castleton, *Harris 9040*, 1905 (NY, US); gravelly river course, Castleton, 500 ft., *Harris 11804*, 1914 (CAS, F, GH, NY, US); hillside, Maryland, vicinity of Newcastle, *Britton 3292*, 1908 (NY); Golden Spring, 235 m., *Fawcett 7988*, 1900 (F, NY, US).

PUERTO RICO. Hacienda Carmelita, Ponce, 500 m., (introduced?), *Sargent 3118*, 1943 (US); planted south of Carolina, *Britton & Britton 9949*, 1932 (NY).

DOMINICA. Without locality, *Fairchild 2721*, 1932 (US).

ST. KITTS. Belmont Estate, *Britton & Cowell 411*, 1901 (NY, US).

HONDURAS. Cultivated, Lancetilla Valley, near Tela, Dept. Atlántida, 20–60 m., *Standley 53646*, 1927–28 (US).

COLOMBIA. ANTIOQUIA: Laguna de Guarne, *Bro. Daniel 2758*, 1942 (US). VALLE DEL CAUCA: North of Palmira (Cauca valley), 1050 m., *Garcia B. 6487*, Dec. 1938–Jan. 1939 (US).

VENEZUELA. CARABOBO: Valencia, "grows wild but is cultivated," *Archer 311*, 1935 (US).

SURINAME. Scotelweg, *Archer 2665*, 1934 (F, US); Sandrij Island, "cultivated cover crop, but also said to be wild in bush," *Archer 2755*, 1934 (US).

BRAZIL. SAO PAULO: Fazenda Sta. Elisa, Campinas, *Houk & Santoro 534*, 1936 (US).

The large flowers, the almost completely fused upper lobes of the calyx, the narrow bracts and the large legumes and seeds are characteristic of this handsome species which appears to be spreading in tropical America. Two pubescence-forms, which seem to represent normal variations in wild Asiatic populations (as represented by herbarium-specimens), occur in the Americas. In one (e. g., all specimens from Jamaica and St. Kitts) the pubescence of the entire plant is appressed. In the second (e.g., specimens from Puerto Rico and Dominica), the stems, petioles and rachises are hirtellous and the leaves softly hirtellous to hirsutulous beneath. The hairs on the legumes of the former are appressed, those on the legumes of the latter spreading.

#### 48. *Tephrosia Vogelii* Hook. f.

*Tephrosia Vogelii* Hook. f. Niger Fl. 296. 1849. "On the Quorra [Nigeria], and Fernando Po, *Vogel*."

*Cracca Vogelii* (Hook. f.) Kuntze, Rev. Gen. 1: 175. 1891.

This species, a native of tropical Africa, is represented in America by an old specimen marked "West Indies—M. Perrin," (NY). This probably represents an early introduction of the species, but not necessarily an escape from cultivation. *Tephrosia Vogelii* has been grown as an ornamental shrub and as a cover-crop in tropical Africa and southeastern Asia and is a well-known fish-poisoning plant. It is being cultivated in tropical America and may escape from cultivation. The only other American specimen I have seen is from Honduras: Cultivated, Lancetilla Valley, near Tela, Dept. Atlantida, 20–60 m., *Standley 53459*, 1927–28 (US). The species is probably related to *T. candida*, but is easily recognized by the large, white flowers 35 mm. long, by the large calyx with oblong lateral lobes, by the pods 10–12 cm. long, 13 mm. wide and densely hirsute with soft, tawny hairs, and by the compressed black seeds about 6–7 mm. long and 4–4.5 mm. wide with a prominent white caruncle.

#### 49. *Tephrosia bracteolata* Guill. & Perr.

*Tephrosia bracteolata* Guill. & Perr. Fl. Seneg. Tent. 194. 1830. Lam Sar, near St. Louis, Senegambia.

*Cracca bracteolata* (Guill. & Perr.) Kuntze, Rev. Gen. 1: 174. 1891.



*Tephrosia bracteolata* is known in our area from a single specimen from the herbarium of R. T. Lowe, and now in the Gray Herbarium. It was collected in "Santo Domingos", 29 January 1866. In the absence of other information this species should be regarded as a stray introduction and not as an established member of the American flora. The plant is easily distinguished from other species known from the Americas by its 11–15 linear leaflets which are 2–6 cm. long, 2–4 mm. wide, obtuse to retuse at the apex, glabrous above and densely strigillose beneath, by the slender, few-flowered racemes inserted obliquely in the axils, by the small flowers 10–12 mm. long, by the strigillose calyx 2 mm. long, and by the hirtellous legume 4.5 cm. long and 4 mm. wide. A more complete description is to be found in Rydberg, N. Amer. Fl. **24**: 182. 1923. I have seen no authentic material of this species and am not convinced that this identification is correct.

#### EXCLUDED GLABROUS-STYLED TEPHROSIAS

The following list is composed of names which have been applied to American glabrous-styled species of *Tephrosia*. The synonymy given is primarily nomenclatural with but a few taxonomic references in connection with species with which I am familiar.

- TEPHROSIA ADSCENDENS Benth. in Mart. Fl. Bras. **15**(1): 48. 1859.  
 TEPHROSIA ADUNCA Benth. Ann. Nat. Hist. I. **3**: 432. 1839. *Cracca adunca* (Benth.) Kuntze, Rev. Gen. **1**: 174. 1891. *Tephrosia adunca* var. *genuina* Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919.  
 TEPHROSIA ADUNCA var. ACUTIFOLIA Chod. & Hassl. Bull. Herb. Boiss. II. **4**: 839. 1904.  
 TEPHROSIA ADUNCA var. GENUINA f. PSEUDO-MARGINATA Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919.  
 TEPHROSIA ADUNCA var. GUARANITICA (Chod. & Hassl.) Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919. *Tephrosia guaranitica* Chod. & Hassl.  
 TEPHROSIA ADUNCA var. INTERMEDIA Chod. & Hassl. Bull. Herb. Boiss. II. **4**: 839. 1904.  
 TEPHROSIA ADUNCA var. INTERMEDIA f. GLABRIOR Chod. & Hassl. Bull. Herb. Boiss. II. **4**: 1904.  
 TEPHROSIA ADUNCA var. RUFESCENS (Benth.) Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919. *Tephrosia rufescens* Benth.  
 TEPHROSIA ADUNCA var. RUFESCENS f. GRANDIFOLIA Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919.  
 TEPHROSIA ADUNCA var. RUFESCENS f. PARAGUAYENSIS (Ulbr.) Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919. *Tephrosia rufescens* var. *paraguayensis* Ulbr.  
 TEPHROSIA ADUNCA var. SUBGLABRATA Hassl. in Fedde, Rep. Spec. Nov. **16**: 165. 1919.  
 TEPHROSIA ASCENDENS Macfadyen, Fl. Jamaica **1**: 257. 1837. = *T. purpurea* (L.) Pers.?  
 TEPHROSIA ANGUSTISSIMA Shuttlew. ex. Chapm. Fl. Southern U. S. 96. 1865, not Engl. Bot. Jahrb. **10**: 29. 1888. *Cracca angustissima* (Shuttlew. ex Chapm.) Kuntze, Rev. Gen. **1**: 174. 1891. *Tephrosia purpurea* var. *angustissima* (Shuttlew. ex Chapm.) B. L. Robinson.

- CRACCA BENENSIS Rusby, Mem. N. Y. Bot. Gard. 7: 262. 1927.
- TEPHROSIA BRANDEGEI (Standl.) Riley, Kew Bull. 1923: 339. 1923. *Cracca Brandegei* Standl. Contr. U. S. Nat. Herb. 20: 217. 1919.
- TEPHROSIA BREVIPES Benth. Ann. Nat. Hist. I. 3: 432. 1839. *Cracca brevipes* (Benth.) Kuntze, Rev. Gen. 1: 174. 1891. = *Tephrosia sessiliflora* (Poir.) Hassl.
- TEPHROSIA CATHARTICA (Sessé & Moc.) Urb. Symb. Ant. 4: 283. 1905. *Galega cathartica* Sessé & Moc. Fl. Mex. ed. 2. 175. 1894. *Cracca cathartica* (Sessé & Moc.) Britt. & Millsp. Bahama Fl. 181. 1920. = *Tephrosia Senna* HBK.
- TEPHROSIA CINEREA (L.) Pers. Syn. Pl. 2: 328. 1807. *Galega cinerea* L. Syst. Nat. ed. 10. 2: 1172. 1759. *Cracca cinerea* (L.) Morong, Ann. N. Y. Acad. Sci. 7: 79. 1892. *Colinil cinereum* (L.) Hitchc. Mo. Bot. Gard. Rep. 4: 75. 1893. *Tephrosia cinerea* var. *typica* Hassl. in Fedde, Rep. Spec. Nov. 16: 166. 1919.
- TEPHROSIA CINEREA  $\beta$  LITTORALIS (Jacq.) Benth. in Mart. Fl. Bras. 15(1): 48. July 1859. *Tephrosia cinerea*  $\beta$  *littoralis* (Jacq.) Griseb. Fl. Br. W. Ind. 182. 1859 (probably latter half of year). = *T. cinerea* (L.) Pers.
- TEPHROSIA CINEREA var. TYPICA f. PSEUDO-ADUNCA Hassl. in Fedde, Rep. Spec. Nov. 16: 166. 1919.
- TEPHROSIA CINEREA  $\gamma$  VILLOSIOR Benth. in Mart. Fl. Bras. 15(1): 48. 1859. = *T. cinerea* (L.) Pers.
- CRACCA CORALLICOLA Small, Bull. Torrey Club 36: 160. 1909.
- CRACCA CURTISSII Small ex Rydb. N. Amer. Fl. 24: 179. 1923.
- TEPHROSIA DECUMBENS Benth. ex Benth. & Oerst. Kjoeb. Vidensk. Meddel. 1853: 7. 1854. *Cracca decumbens* (Benth. ex Benth. & Oerst.) Kuntze, Rev. Gen. 1: 175. 1891.
- TEPHROSIA DOMINGENSIS (Willd.) Pers. Syn. Pl. 2: 330. 1807. *Galega domingensis* Willd. Sp. Pl. 3 (2): 1249. 1802. *Cracca domingensis* (Willd.) Rydb. N. Amer. Fl. 24: 181. 1923. = *Tephrosia cinerea* (L.) Pers., at least sensu Rydb.
- TEPHROSIA EGREGIA Sandwith, Kew Bull. 1927: 249. 1927.
- TEPHROSIA GUARANITICA Chod. & Hassl. Bull. Herb. Boiss II. 4: 879. 1904. *Tephrosia adunca* var. *guaranitica* (Chod. & Hassl.) Hassl.
- TEPHROSIA GYNOTHRIX Miq. Linnaea 18: 29. 1844. = *Tephrosia cinerea* (L.) Pers.
- TEPHROSIA HASSLERI Chod. Bull. Herb. Boiss. II. 4: 879. 1904; emend Hassl. in Fedde, Rep. Spec. Nov. 16: 163. 1919.
- CRACCA HIRTA (Buch.-Ham.) Britton & Wilson, Sci. Surv. Porto Rico & Virgin Ids. 6: 351. 1926. *Galega hirta* Buch.-Ham. Trans. Linn. Soc. 13: 546. 1822. *Cracca hirta* sensu Britton & Wilson appears to be *Tephrosia noctiflora* Boj. ex Baker, but the plant described by Hamilton from India cannot be that species and from the description seems to be *Tephrosia villosa* (L.) Pers., a plant with very different calyx-lobes.
- CRACCA HYPOLEUCA Rydb. N. Amer. Fl. 24: 180. 1923, not *C. hypoleuca* (Boiss.) Aef. 1861, nor *Tephrosia hypoleuca* Riley, 1923. *Indigofera Perriniana* Spreng. Neue Entd. 2: 161. 1821, not *Galega Perriniana* Spreng. l. c., nor *Cracca Perriniana* (Spreng.) Kuntze, Rev. Gen. 1: 175. 1891, nor *Tephrosia Perriniana* (Spreng.) DC. Prodr. 2: 261. 1825. Known from the New World only by a single collection sent to Sprengel by Perrin, presumably from the West Indies (NY). This seems to be the plant treated by Baker in Oliver, Fl. Trop. Afr. 2: 120. 1871, as *Tephrosia linearis* (Willd.) Pers. and matches specimens cited by Baker. It should be regarded as nothing more than a waif in the Western Hemisphere.
- TEPHROSIA LEPTOSTACHYA DC. Prodr. 2: 251. 1825. *Cracca leptostachya* (DC.) Rusby, Mem. Torr. Club 3(3): 18. 1893. The description of this species from Senegal could apply to any of several dozen species, and the name has been used for a number of plants both endemic and introduced in the Americas. I have not been able to determine the correct application of this name.

- TEPHROSIA LEPTOSTACHYA  $\beta$  LEPTOPHYLLA Benth. in Mart. Fl. Bras. 15(1): 49. 1859.
- TEPHROSIA LINEARIS (Willd.) Pers. Syn. Pl. 2: 330. 1807. *Galega linearis* Willd. Sp. Pl. 3(2): 1248. 1802. See *Cracca hypoleuca* Rydb.
- TEPHROSIA LITTORALIS (Jacq.) Pers. Syn. Pl. 2: 329. 1807. *Vicia littoralis* Jacq. Enum. Pl. Carib. 27. 1760. *Galega littoralis* (Jacq.) L. Syst. Nat. ed. 12. 2: 497. 1767. *Cracca littoralis* (Jacq.) Rydb. N. Amer. Fl. 24: 178. 1923. *Tephrosia cinerea*  $\beta$  *littoralis* (Jacq.) Benth. *Tephrosia cinerea*  $\beta$  *littoralis* (Jacq.) Griseb. = *Tephrosia cinerea* (L.) Pers.
- TEPHROSIA MARGINATA Hassl. in Fedde, Rep. Spec. Nov. 16: 162. 1919.
- TEPHROSIA MARGINATA var. CINERASCENS Hassl. in Fedde, Rep. Spec. Nov. 16: 163. 1919.
- TEPHROSIA MARGINATA var. PSEUDO-RUFESCENS Hassl. in Fedde, Rep. Spec. Nov. 16: 163. 1919.
- TEPHROSIA NERVOSA Chod. & Hassl. Bull. Herb. Boiss. II. 4: 839. 1904.
- TEPHROSIA NOCTIFLORA Boj. ex Baker in Oliver, Fl. Trop. Afr. 2: 112. 1871. *Cracca noctiflora* (Boj. ex Baker) Kuntze, Rev. Gen. 1: 175. 1891. *Cracca hirta* (Buch.-Ham.) Britton & Wilson, Sci. Surv. Porto Rico & Virgin Ids. 6: 351. 1926, as to plant, not basonym (*Galega hirta* Buch.-Ham. = *Tephrosia villosa* (L.) Pers.?). Naturalized in the West Indies from Africa.
- TEPHROSIA PENICILLATA Benth. Ann. Nat. Hist. I. 3: 431. 1839. = *Tephrosia adunca* Benth. according to Benth. in Mart. Fl. Bras. 15(1): 47. 1859.
- TEPHROSIA PISCATORIA (Ait.) Pers. Syn. Pl. 2: 329. 1807. *Galega piscatoria* Ait. Hort. Kew. ed. 1. 3: 71. 1789. *Cracca piscatoria* (Ait.) Lyons, Pl. Names Scientific & Popular 120. 1900, basonym attributed to Solander. The habitat was said in the original description to be "India orientali et ins. Maris pacifici." This name has been applied to native American plants which bear little resemblance to the species described.
- TEPHROSIA PERRINIANA (Spreng.) DC. Prodr. 2: 251. 1825. *Galega Perriniana* Spreng. Neue Entdeck. 2: 161. 1821. *Cracca Perriniana* (Spreng.) Kuntze, Rev. Gen. 1: 175. 1891. Not *Indigofera Perriniana* Spreng. nor *Cracca hypoleuca* Rydb. Said by Sprengel to be related to *Galega domingensis* Willd., but the description completely inconclusive. This may not be a *Tephrosia* at all. Probably from South America.
- TEPHROSIA PROCUMBENS Macfadyen, Fl. Jamaica 1: 256. 1837. = *T. cinerea* (L.) Pers.
- TEPHROSIA PURPUREA (L.) Pers. Syn. Pl. 2: 329. 1807. *Cracca purpurea* L. Sp. Pl. ed. 1. 2: 752. 1753. *Galega purpurea* L. Syst. Nat. ed. 10. 2: 1172. 1759. Introduced from India and naturalized on beaches and sandy disturbed soils in Jamaica, Hispaniola, Dominica, Martinique, Barbados and Trinidad. The plant described by Linnaeus appears to be this species with 11–19 relatively large yellowish-green, cuneate-oblong, cuneate or obovate leaflets, rather coarse, often erect habit, staminal tube 5–5.5 mm. long, and legumes with 5–7 seeds, characters which distinguish it from *Tephrosia cinerea* and *T. Senna* with which it is often confused. (See GH-photograph of Type, *Galega*, Sheet no. 7, in Herb. L.) This plant appears to be the same as that described as *T. Wallichii* Graham ex Fawcett & Rendle. Although *T. purpurea* is assigned a pan-tropical distribution by many authors, a number of species are involved.
- TEPHROSIA PURPUREA var. ANGUSTISSIMA (Shuttlew. ex Chapm.) B. L. Robinson, Bot. Gaz. 28: 201. 1899. *T. angustissima* Shuttlew. ex Chapm.
- TEPHROSIA RUFESCENS Benth. Linnaea 22: 513. 1849. *T. adunca* var. *rufescens* (Benth.) Hassl.
- TEPHROSIA RUFESCENS var. PARAGUAYENSIS Ulbr. in Fedde, Rep. Spec. Nov. 2: 12. 1906. *T. adunca* var. *rufescens* f. *paraguayensis* (Ulbr.) Hassl.
- CRACCA RUSBYI Rydb. N. Amer. Fl. 24: 181. 1923.
- CRACCA SCHOTTII Vail, Bull. Torr. Cl. 22: 25. 1895. = *Tephrosia Senna* HBK.

- TEPHROSIA SCOPULORUM Brandeg. Univ. Calif. Publ. Bot. 6: 181. 1915.  
= *T. cinerea* (L.) Pers.
- TEPHROSIA SENNA HBK. Nov. Gen. et Sp. (folio) 6: 359. Aug. 1824. Op. cit. (quarto) 6: 458. Sept. 1824. *Cracca Senna* (HBK.) Kuntze, Rev. Gen. 1: 175. 1891. Collected by Humboldt and Bonpland on the Cauca River near Buga, Valle del Cauca, Colombia, Oct. 1801. The detailed description clearly applies to the plant which has been known as *Tephrosia cathartica* (Sessé & Moc.) Urb., and Mr. E. P. Killip writes me that he has examined the Type at Paris and that it is indeed this species.
- TEPHROSIA SESSILIFLORA (Poir.) Hassl. in Fedde, Rep. Spec. Nov. 16: 162. 1919. *Cytisus sessiliflorus* Poir. in Lam. Encycl. Suppl. 2: 439. 1811. *Rhynchosia sessiliflora* (Poir.) DC. Prodr. 2: 389. 1825. *Tephrosia brevipes* Benth. This species is quite unlike any other American member of the genus. The circumscissile calyx, entirely axillary flowers, 1-3 leaflets and glabrous styles set it apart from all other species in our region. It is known from Oaxaca, Mexico, (Guatulco, *Liebmann 5165*, Oct. 1843, F-fragment ex Herb. Bot. Mus. Copenhagen), Haiti, Trinidad, Venezuela, British Guiana, Brazil and Paraguay.
- TEPHROSIA TENELLA A. Gray, Pl. Wright. 2: 36. 1853. *Cracca tenella* (A. Gray) Rose, Contr. U. S. Nat. Herb. 12: 271. 1909.
- TEPHROSIA VENUSTULA HBK. Nov. Gen. et Sp. (folio) 6: 360. Aug. 1824; Op. cit. (quarto) 6: 459. Sept. 1824. According to Bentham in Mart. Fl. Bras. 15(1): 47. 1859, this is *Tephrosia cinerea* (L.) Pers.
- TEPHROSIA VICIOIDES Schlecht. Linnaea 12: 297. 1838, not A. Rich. 1847. *Cracca vicioides* (Schlecht.) Kuntze, Rev. Gen. 1: 175. 1891.
- TEPHROSIA VILLOSA (L.) Pers. Syn. Pl. 2: 329. 1807. *Galega villosa* L. Syst. Nat. ed. 10. 2: 1172. 1759. *Cracca villosa* L. Sp. Pl. ed. 1. 2: 752. 1753. Known to me only from cultivated specimens in the Americas.
- CRACCA VILLOSA  $\delta$  CINEREA (L.) Kuntze, Rev. Gen. 1: 173. 1891. = *Tephrosia cinerea* (L.) Pers.
- TEPHROSIA WALLICHII Graham ex Fawcett & Rendle, Jour. Bot. 55: 35. 1917. *Cracca Wallichii* (Graham ex Fawcett & Rendle) Rydb. N. Amer. Fl. 24: 180. 1923. = *Tephrosia purpurea* (L.) Pers., introduced into the West Indies.

## SPECIES EXCLUDED FROM TEPHROSIA

- TEPHROSIA AMORPHAEFOLIA Kunth & Bouché, Ann. Sci. Nat. III. 7: 189. 1847. Unknown to me.
- TEPHROSIA ANILOIDES Bello, Anal. Soc. Esp. Hist. Nat. 10: 258. 1881. *Cracca aniloides* (Bello) Cook & Collins. = *Cracca caribaea* (Jacq.) Benth.
- TEPHROSIA ASTRAGALINA HBK. Nov. Gen. et Sp. (quarto) 6: 464. Sept. 1824; Op. cit. (folio) 6: 363. Sept. 1824. *Cracca astragalina* (HBK.) Kuntze, Rev. Gen. 1: 174. 1891. Not *Tephrosia*.
- TEPHROSIA BARCLAYI Baillon, Bull. Soc. Linn. Paris 1: 388. 1883. According to Rydberg, N. Amer. Fl. 24: 183. 1923, this is a species of *Dalbergia*.
- CRACCA BICOLOR Micheli, Bull. Herb. Boiss. 2: 444. pl. 11. 1894. = *Cracca Benth.*
- CRAFORDIA BRACTEATA Raf. Specchio 1: 156. 1814. Although this name is usually assigned to the synonymy of *Tephrosia spicata* (Walt.) T. & G., the plant described by Rafinesque from the Susquehannah River, Pennsylvania, United States, cannot possibly be a *Tephrosia*; the description certainly does not apply to any species of the genus in the United States.
- TEPHROSIA CARIBAEA (Jacq.) DC. Prodr. 2: 251. 1825. *Galega caribaea* Jacq. Sel. Stirp. Am. 212. 1763. *Cracca caribaea* (Jacq.) Benth. ex Benth. & Oerst. Kjoeb. Vidensk. Meddel. 1853: 9. 1854. = *Cracca Benth.*
- CRACCA CARIBAEA var. EDWARDSII (Gray) Hassl. in Fedde, Rep. Spec. Nov. 16: 160. 1919. = *Cracca Benth.*
- CRACCA CARIBAEA var. GLANDULIFERA Hassl. in Fedde, Rep. Spec. Nov. 16: 160. 1919. = *Cracca Benth.*

- CRACCA CARIBAEA* var. *GLANDULIFERA* f. *DUBIA* Hassl. in Fedde, Rep. Spec. Nov. 16: 160. 1919. = *Cracca* Benth.
- TEPHROSIA CHILENSIS* Trev. Linnaea 10: Litt. 73. 1836. Grown from seeds supposedly from Chile. No *Tephrosias* are known to me from that region and the plant with 2-seeded pods described does not seem to be one.
- TEPHROSIA COERULEA* Pers. Syn. Pl. 2: 329. 1807. = *Dalea Mutisii* Kunth, according to Index Kewensis.
- CRACCA COLLINA* M. E. Jones, Contr. West. Bot. 15: 137. 1929. = *Eriosema grandiflorum* (Schlecht. & Cham.) Seem. Bot. Voy. Herald 345. 1857. See Standley, Field Mus. Publ. Bot. 11: 161. 1936.
- TEPHROSIA CONSTRICTA* S. Wats. Proc. Amer. Acad. 24: 46. 1889. *Cracca constricta* (S. Wats.) Tidestrom, Proc. Biol. Soc. Wash. 48: 40. 1935. = *Sphinctospermum constrictum* (S. Wats.) Rose, Contr. U. S. Nat. Herb. 10: 107. pl. 34. 1906, a monotypic genus separated morphologically and cytologically from *Tephrosia* and more closely allied to *Cracca* Benth.
- CRACCA CORUMBAE* Hoehne, Comm. Linh. Telegr. Estrat. Matto-Grosso (Publ. 45), Anexo 5, Bot. pt. 8: 63 (as *Gracca*), pl. 153. 1919. Unknown to me, but not *Tephrosia*.
- TEPHROSIA CRACCOIDES* Lillo, Bol. Mus. Cien. Nat. Univ. Tucuman, no. 6: 8. 1925, without Latin diagnosis and described merely as "Planta de tres a cuatro metros de alto, de flor blanca." This is *Coursetia brachyrhachis* Harms (see Burkart 1943, p. 297).
- BALBOA DIVERSIFOLIA* Liebm. Kjoeb. Vidensk. Meddel. 1853: 106. 1854. "Habitat ad oram occidentalem Mexici (Dep. Oajaca) inter Chacalapa et S. Jago Estata," Liebmann 4626, Nov. 1842 (US). Although usually referred to the synonymy of *Tephrosia*, Liebmann clearly indicated this to be a member of the Tribe Phaseolae and probably most closely related to *Periandra* Mart. I have been unable to place this plant, but it certainly is not a *Tephrosia*.
- TEPHROSIA DOLICHOCARPA* Griseb. Goett. Abh. 24: 101. 1879. *Cracca dolichocarpa* (Griseb.) Kuntze, Rev. Gen. 1: 175. 1891. Apparently known only from the Sierra de Cordoba in Argentina, this species is not a *Tephrosia*. I have not seen flowering specimens, but the inflorescence appears to be different from that of *Tephrosia* and the leaflets are stipellate, a feature unknown in *Tephrosia*.
- CRACCA EDWARDSII* A. Gray, Pl. Wright. 2: 36. 1853. *Cracca caribaea* var. *Edwardsii* (A. Gray) Hassl. = *Cracca* Benth.
- CRACCA EDWARDSII* var. *GLABELLA* A. Gray, Proc. Amer. Acad. 17: 201. 1882. = *Cracca* Benth.
- CRACCA EDWARDSII* var. *SERICEA* A. Gray, Proc. Amer. Acad. 17: 201. 1882. *Cracca sericea* A. Gray. = *Cracca* Benth.
- TEPHROSIA?* *ELLIOTTII* (Nutt.) Benth. Ann. Wien. Mus. 2: 127, in obs. 1838. = *Galactia Elliottii* Nutt.
- TEPHROSIA FILIFORMIS* (Jacq.) Pers. Syn. Pl. 2: 328. 1807. *Galega filiformis* Jacq. Collect. 2: 348. 1788. *Cracca filiformis* (Jacq.) Kuntze, Rev. Gen. 1: 175. 1891. The plant illustrated by Jacquin is a species of *Galactia*.
- TEPHROSIA FRUTICOSA* M. E. Jones, Extr. Contr. West. Bot. 18: 43. 1933. The "flowers yellow and purple-veined," cannot apply to *Tephrosia*. Jones noted, "This may be an *Eriosema*." This plant was collected in the Barranca of Guadalajara where a shrubby *Eriosema* is a conspicuous element. See also Morton, Contr. U. S. Nat. Herb. 29: 104. 1945.
- TEPHROSIA FRUTESCENS* (Mill.) DC. Prodr. 2: 256. 1825. *Galega frutescens* Mill. Gard. Dict. ed. 8. *Galega* no. 3. 1768. *Cracca frutescens* (Mill.) Kuntze, Rev. Gen. 1: 175. 1891. According to Britten and Baker, Jour. Bot. 35: 225. 1897, this is *Indigofera mucronata* Spreng. ex DC.
- TEPHROSIA GLABRESCENS* Benth. Bot. Voy. Sulph. 81. 1844. *Cracca glabrescens* Benth. ex Benth. & Oerst. Kjoeb. Vidensk. Meddel. 1853: 9. 1854. = *Cracca* Benth.

- TEPHROSIA GLANDULIFERA Benth. Bot. Voy. Sulph. 81. 1844. *Cracca glandulifera* Benth. ex Benth. & Oerst. Kjoeb. Vidensk. Meddel. 1853: 8. 1854. = *Cracca* Benth. or *Coursetia glandulifera* (Benth.) Macbr.
- CRACCA GREENMANNII Millsp. Field Col. Mus. Bot. Ser. 1: 299. pl. 13. 1896. = *Cracca* Benth.
- TEPHROSIA HETERANTHA Griseb. Goett. Abh. 24: 101. 1879. *Cracca heterantha* (Griseb.) Kuntze, Rev. Gen. 1: 175. 1891. *Cracca Kuntzei* Harms ex Kuntze. *Neocracca heterantha* (Griseb.) Spegazzini, Physis 8: 119. 1925. A peculiar plant, apparently an aberrant member of or closely related to *Cracca* Benth. (see Burkart 1943).
- CRACCA KUNTZEI Harms ex Kuntze, Rev. Gen. 3(2): 69. 1898. *Neocracca Kuntzei* (Harms ex Kuntze) Kuntze, l. c. = *Cracca heterantha* (Griseb.) Kuntze or *Neocracca heterantha* (Griseb.) Spegazzini.
- TEPHROSIA LONGIFOLIA (Jacq.) Pers. Syn. Pl. 2: 328. 1807. *Galega longifolia* Jacq. Collect. 2: 349. 1788. The plant illustrated by Jacquin is a species of *Galactia*.
- CRACCA MICRANTHA Micheli in Dur. & Pitt. Bull. Soc. Bot. Belg. 30(1): 286. 1891. *Benthamantha mollis* var. *macrantha* (Micheli) Standl. = *Cracca* Benth.
- CRACCA MOLLIS (HBK.) Benth. & Oerst. Kjoeb. Vidensk. Meddel. 1853: 9. 1854. *Tephrosia mollis* HBK. Nov. Gen. et Sp. (folio) 6: 363. Sept. 1824; Op. cit. (quarto) 6: 463. Sept. 1824, not *T. mollis* Valet. 1907. = *Cracca mollis* (HBK.) Benth. & Oerst. or *Coursetia mollis* (HBK.) Macbr.
- TEPHROSIA MOSCHATA Tussac, Fl. Antill. 2: 22. pl. 6. 1818. = *Corynella dubia* (Poir.) Urb.
- TEPHROSIA? OCHROLEUCA (Jacq.) Pers. Syn. Pl. 2: 329. 1807. *Galega ochroleuca* Jacq. Collect. 1: 79. 1786. *Cracca ochroleuca* (Jacq.) Benth. & Oerst. Kjoeb. Vidensk. Meddel. 1853: 9. 1854. = *Cracca* Benth. or *Coursetia ochroleuca* (Jacq.) Macbr.
- TEPHROSIA OROBOIDES HBK. Nov. Gen. et Sp. (folio) 6: 362. (not pl. 578.) Sept. 1824; Op. cit. (quarto) 6: 462. (not pl. 578.) Sept. 1824. *Cracca oroboides* (HBK.) Kuntze, Rev. Gen. 1: 175. 1891, as *orobodes*. = *Lotus oroboides* (HBK.) Ottley ex Kearney & Peebles, Jour. Wash. Acad. Sci. 29: 483. 1939. (F-fragment of Type). (See Ottley, Brittonia 5: 101. 1944.)
- GALEGA POLYGAMA Sessé & Moc. Fl. Mexic. ed. 2. 174. 1894. Although described with *\*Galega cathartica* Sessé & Moc. and *\*G. cinerea*, this apparently is not *Tephrosia*. Described as having "folia ternata, foliolis ellipticis."
- CRACCA PUMILA (Rose) M. E. Jones, Extr. Contr. West. Bot. 18: 44. 1933. = *Cracca* Benth.
- CRACCA SERICEA A. Gray, Proc. Amer. Acad. 19: 74. 1893. = *Cracca* Benth.
- TEPHROSIA STIPULARIS (Desv.) DC. Prodr. 2: 254. 1825. *Brissonia stipularis* Desv. Jour. Bot. 1: 74. 1814. *Cracca stipularis* (Desv.) Kuntze, Rev. Gen. 1: 175. 1891. Apparently not a species of *Tephrosia*.
- TEPHROSIA VELUTINA Spreng. Syst. 3: 232. 1826. *Cracca velutina* (Spreng.) Kuntze, Rev. Gen. 1: 175. 1891, not Rydb. 1923. This cannot be a species of *Tephrosia*. It was described as "Foliis ternatis . . . fruticosa volubilis, foliolis oblongis, . . ." etc.
- TEPHROSIA VENOSA Mart. & Gal. Bull. Acad. Brux. 10(2): 47. 1843. *Cracca venosa* (Mart. & Gal.) Kuntze, Rev. Gen. 1: 175. 1891. This apparently is a species of *Cracca* Benth. The authors noted its relationship to *Tephrosia mollis* HBK. (= *Cracca mollis* (HBK.) Benth.)

## LITERATURE CITED

- ALEFELD, F. 1861. Ueber Vicieen. Bonplandia 9: 116-131.  
 ———. 1862. Namensanderung zweier Leguminosen-Gattung. Bonplandia 10: 264.
- ALLEN, CAROLINE K. 1945. Studies in the Lauraceae, VI. Preliminary survey of the Mexican and Central American species. Jour. Arnold Arb. 26: 280-434.

- ATCHISON, EARLENE. 1948. Studies in the Leguminosae. II. Cytogeography of *Acacia* (Tourn.) L. *Amer. Jour. Bot.* **35**: 651-655.
- BAILEY, I. W. AND CHARLOTTE NAST. 1948. Morphology and relationships of *Illicium*, *Schizandra* and *Kadsura* I. Stem and Leaf. *Jour. Arnold Arb.* **29**: 77-89.
- BAKER, E. G. 1926. *Tephrosia in The Leguminosae of tropical Africa*. Pt. I: 170-215. Ghent.
- BENTHAM, G. AND A. OERSTED. 1854. *Leguminosae Centroamericanae*. *Kjoeb. Vidensk. Meddel.* **1853**: 1-19.
- BRITTEN, J. AND E. G. BAKER. 1900. On some species of *Cracca*. *Jour. Bot.* **29**: 12-19.
- . 1900a. *Cracca virginiana*. *Jour. Bot.* **29**: 53.
- BRIQUET, J. 1906. *Règles internationales de la nomenclature botanique*, ed. 1, Vienna, 1905. Jena.
- . 1912. *Règles internationales de la nomenclature botanique*, ed. 2, Brussels, 1910. Jena.
- . 1935. *International rules of botanical nomenclature*, ed. 3, Cambridge, 1930. Jena.
- BROWNE, P. 1756. *Civil and natural history of Jamaica*. Ed. 1. London.
- BURKART, A. 1943. *Las leguminosas Argentinas silvestres y cultivadas*. Buenos Aires.
- CONSTANCE, L. 1949. A revision of *Phacelia* subgenus *Cosmanthus* (Hydrophyllaceae). *Contr. Gray Herb. Harv. Univ.* 168.
- CROCKER, W. 1938. Life-span of seeds. *Bot. Rev.* **4**: 235-274.
- DEAM, C. C. 1940. *Tephrosia in Flora of Indiana*. 601. Indianapolis.
- DECANDOLLE, AUGUSTIN P. 1825. *Tephrosia in Prodromus systematis naturalis regni vegetabilis* **2**: 248-256. Paris.
- DOMIN, K. 1926. *Tephrosia in Beitrage zur Flora und Pflanzengeographie Australiens* **1**(3): 187-286. (*Biblioth. Bot.* **23**: 741-840).
- DUCKE, A. 1939. *As leguminosas da Amazônia brasileira*. Rio de Janeiro.
- FASSETT, N. C. 1939. *Tephrosia in Leguminous plants of Wisconsin*. 57-63. Madison, Wisc.
- FERNALD, M. L. 1943. Virginian botanizing under restrictions. *RHODORA* **45**: 357-413, 455-480, 485-511.
- FORBES, HELENA M. L. 1948. A revision of the South African species of the genus *Tephrosia* Pers. *Bothalia* **4**: 951-1001.
- GENTRY, H. S. 1942. *Rio Mayo plants, a study of the flora and vegetation of the valley of the Rio Mayo, Sonora*. Carnegie Inst. Wash. Publ. 527.
- . 1946. Notes on the vegetation of Sierra Surotato in northern Sinaloa. *Bull. Torrey Club* **73**: 451-462.
- . 1946a. Sierra Tacuichamona—a Sinaloa plant locale. *Bull. Torrey Club* **73**: 356-362.
- GRENIER, CH. AND D. A. GODRON. 1848. *Cracca in Flore de France* **1**: 468-473. Paris.
- GRIFFITH, R. E. 1847. *Medical Botany*. Philadelphia.
- HARVEY, W. H. in HARVEY AND SONDER. 1861-1862. *Tephrosia in Flora Capensis* **2**: 203-211. Dublin.
- HUSKINS, C. L. 1948. Chromosome multiplication and reduction in somatic tissues. *Nature* **161**: 80-83. 17 Jan.
- KAWAKAMI, J. 1930. Chromosome numbers in Leguminosae. *Bot. Mag. Tokyo* **44**: 319-328.
- KREUTER, E. 1929. Chromosomen-studien bei den Galegeen. *Ber. der Deut. Bot. Gesell.* **47**: 99-101.
- . 1930. Beitrag zur karyologisch-systematischen Studien an Galegeen. *Plant. Arch. Wiss. Bot.* **11**(1): 1-44.
- KUNTZE, O. 1891. *Brittonamra and Cracca in Revisio generum plantarum* **1**: 164-165, 173-176. Würzburg.
- LANJOUW, J. 1939. On the standardization of herbarium abbreviations. *Chron. Bot.* **5**: 142-150.

- LANJOUW, J. 1941. Index herbariorum. *Chron. Bot.* **6**: 377-378.
- LINNAEUS, C. 1753. *Cracca* in *Species plantarum* **2**: 752.
- . 1759. *Galega* in *Systema natura*, ed. 10. **2**: 1172.
- LITTLE, V. A. 1942. Rotenone content, an inherited character in the roots of Devil's Shoestring, *Tephrosia virginiana*. *Jour. Econ. Entomology* **35**: 54.
- McINDOO, N. E. 1945. Plants of possible insecticidal value—a review of the literature up to 1941. U. S. Bur. Entomology & Pl. Quarantine Publ. E-661. Washington.
- MARTIN, A. C. 1946. The comparative internal morphology of seeds. *Amer. Midland Nat.* **36**: 513-660.
- PERSOON, C. H. 1807. *Tephrosia* in *Synopsis plantarum* **2**: 328-330. Paris.
- RAFINESQUE, C. S. 1830. *Medical flora, or manual of the medical botany of the United States of America*. Philadelphia.
- REHDER, A., C. A. WEATHERBY, R. MANSFELD AND M. L. GREEN. 1935. Conservation of later generic homonyms. *Kew Bull.* **1935**: 341-544.
- ROARK, R. C. 1937. *Tephrosia* as an insecticide—a review of the literature. U. S. Bur. Entomology & Pl. Quarantine Publ. E-402. Washington.
- ROBINSON, B. L. 1899. Revision of the North American species of *Tephrosia*. *Bot. Gaz.* **28**: 193-202.
- RYDBERG, P. A. 1923. *Cracca* in *N. Amer. Fl.* **24**(3): 157-183.
- . 1923a. Genera of North American Fabaceae I. Tribe Galegeae. *Amer. Jour. Bot.* **10**: 485-498. pls. 33-35.
- SENN, H. A. 1938. Chromosome number relationships in the Leguminosae. *Bibl. Genetica* **12**: 175-336.
- SIEVERS, A. F., G. A. RUSSELL, M. S. LOWMAN, E. D. FOWLER, C. O. ERLANSON AND V. A. LITTLE. 1938. Studies on the possibilities of Devil's Shoestring (*Tephrosia virginiana*) and other native species of *Tephrosia* as commercial sources of insecticides. U. S. Dept. Agr. Tech. Bull. 595. Washington.
- SPRAGUE, T. A. 1940. Additional nomina generica conservanda (Pteridophyta and Phanerogamae). *Kew Bull.* **1940**: 81-134.
- STANDLEY, P. C. 1922. *Cracca* in *Trees and shrubs of Mexico* (Fagaceae-Fabaceae). *Contr. U. S. Nat. Herb.* **23**(2): 470-475.
- AND J. STEYERMARK. 1946. *Tephrosia* in *Flora of Guatemala*. *Fieldiana: Botany* **24**(5): 352-357.
- TAUBERT, P. 1894. *Tephrosia* in *Pflanzenfamilien* **3**(3): 267-273.
- TORREY, J. AND A. GRAY. 1838. *Tephrosia* in *Flora of North America* **1**: 295-297. New York.
- U. S. DEPARTMENT OF AGRICULTURE. 1938. *Soils of the United States in Soils and Men, Yearbook of agriculture 1938*, pt. 5. 1019-1161 and map. Washington.
- VAIL, ANNA M. 1895. A revision of the North American species of the genus *Cracca*. *Bull. Torrey Club* **22**: 25-36.
- VILKOMERSON, HILDA. 1943. Chromosomes of *Astragalus*. *Bull. Torrey Club* **70**: 430-435.
- WALTER, T. 1788. *Galega* in *Flora Caroliniana*. 187-188. London.
- WHITE, S. S. 1948. The vegetation and flora of the region of the Rio de Bavispe in northeastern Sonora, Mexico. *Lloydia* **11**: 229-302.

#### ADDITIONS AND CORRECTIONS

- Page 233, 234: Note that the synonymy given for *Tephrosia* Pers. includes only names which have been applied to species indigenous to or introduced into the Americas.
- Page 267: To the synonymy of *Tephrosia virginiana* add *Tephrosia virginiana* var. *leucosericea* (Rydb.) F. J. Hermann, *Jour. Wash. Acad. Sci.* **38**: 237. 1948.
- Page 315: To the synonymy of *Tephrosia chrysophylla* × *T. florida* add *Tephrosia ambigua* (M. A. Curtis) Chapm. var. *intermedia* (Small) F. J. Hermann, *Jour. Wash. Acad. Sci.* **38**: 237. 1948.